

NEOTYPE DESIGNATION FOR
SCARITES SUBTERRANEUS FABRICIUS 1775
(COLEOPTERA: CARABIDAE: SCARITINI)

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Abstract.—The presumed type of *Scarites subterraneus* Fabricius 1775 (described from "America") deposited in the Zoological Museum at Copenhagen, Denmark is not conspecific with what is generally regarded as *Scarites subterraneus* F. The Copenhagen specimen compares favorably with both specimens and descriptions of *Scarites abbreviatus* Dejean, a species endemic to the Madeira Islands. There is sufficient doubt regarding the type status of the Copenhagen specimen that a neotype is proposed for *Scarites subterraneus* F. in order to assure taxonomic stability. The origin of the neotype is Pt. Pelee, Ontario, Canada. The species concept adopted equals *Scarites subterraneus* s. str. of Bänninger (1938). The species concept of *Scarites subterraneus* in Lindroth's *The ground-beetles of Canada and Alaska* (1961-1969) includes two species, one of which is *Scarites subterraneus* s. str. of Bänninger. A diagnosis is provided for the concept of *Scarites subterraneus* adopted here.

As part of a current systematic revision of the West Indian Scaritini (Coleoptera: Carabidae) I find it necessary to stabilize the species concept of *Scarites subterraneus* Fabricius (1775:249), a common North American species which ranges south into Cuba. Stabilization of the species concept is also desirable because *Scarites subterraneus* F. is the type species of the genus, and the nominate subgenus (Bänninger, 1938:114; Lindroth, 1961:128; Basilewsky, 1973:178).

Lindroth (1961:129) noted that the Copenhagen specimen regarded as the type of *Scarites subterraneus* F. (see Zimsem, 1964:41) is not conspecific with what is commonly regarded as *Scarites subterraneus* F. by American authors. I have examined the Copenhagen specimen and I concur with Lindroth's observation. The Copenhagen specimen belongs to the subgenus *Scallophorites* (Bänninger, 1938:153; Reichardt, 1977:388). *Scallophorites* spp. are entirely Old World except for two taxa assigned to the group from South America (Bänninger, 1938). The Copenhagen specimen is definitely an Old World form. Although the specimen is lacking both hind legs, making identification difficult, other anatomical characters compare favorably with both specimens and descriptions (specimens deposited in the United States National Museum) of *Scarites abbreviatus* Dejean (1825:379), a species endemic to the Madeira Islands (Bänninger, 1938:177).

I have also examined two specimens deposited in the Hunterian Collection at Glasgow (see Staig, 1931:25) which presumably may have been examined by Fabricius. These are likewise Old World *Scallophorites*, bearing no locality or identification labels, and representing yet another species of unknown identity. There is no evidence that Fabricius ever saw the Glasgow specimens.

Fabricius (1775:249) gave the type locality of *Scarites subterraneus* as "America." Although the type locality given could be in error, there are several reasons to doubt the type status of the Copenhagen specimen despite the handwritten "subterraneus" label, which may in fact be in Fabricius's hand, and despite the listing of the specimen in Zimsem (1964:41).

Fabricius gives the source of material of *Scarites subterraneus* as "Dom. Lewin," here referring to William Lewin (the elder), one of the early British lepidopterists (Lisney, 1960:286). Fabricius undoubtedly examined Lewin's collection during one of his early visits to England during the years of 1772–1775 (see Hope, 1845:viii).

According to Tuxen (1967:8–9), Fabricius consistently used the designation "Mus." for specimens deposited in other persons collections, while specimens lacking this designation were deposited in Fabricius's own collection (i.e., "Mus Dom. Banks" would translate as "in the collection of Banks"; whereas "Dom. Lewin" would translate as "from Lewin"). Unfortunately, Tuxen's generalization is not true (e.g., *Scarabaeus validus* Fabricius, 1775:6 "Habitat in Brasilia. Dom. Bancks." (sic), type in London; *Scarabaeus laborator* Fabricius, 1775:18 "Habitat in stercore bovino Brasiliae. D. Banks.," type in London; *Scarabaeus meliboes* Fabricius, 1792:20 "Habitat in America boreali Dom. Lee," type in Oxford; *Scarabaeus mopsus* Fabricius, 1792:58 "Habitat in India orientali. Dom. Lee.," type in Oxford) (see Zimsem, 1964). Consequently, there is no real evidence that Lewin's specimen(s) of *Scarites subterraneus* ever left England.

One must also realize that the species concept of Fabricius and his contemporaries corresponded approximately to today's generic concept and that there were no rules regarding type specimens at that time. Fabricius (1775) placed six species within his new genus *Scarites*; all are now in different genera and three are now placed in other families: *Scarites subterraneus* F. (Scaritini: Scaritina); *Lacocpterum cyaneum* (F.) (Scaritini: Carenina); *Clivina fossor* (L.) (= *arenarius* F.) (Scaritini: Clivinina); *Oryzaephilus surinamensis* (L.) (= *cursor* F.) (Cucujidae); *Uleiota planata* (L.) (= *arabs* F.) (Cucujidae); and *Orthocerus clavicornis* (L.) (Colydiidae). Fabricius's concept of *Scarites subterraneus* must have been broad since he later (1801:122) reports this species from both America and southern Europe. This must have been a common situation for the time, when identifications relied largely on terse Latin descriptions and memory. The specimen at Copenhagen, if actually seen by Fabricius, could easily be a specimen that he acquired after 1775 and proudly curated by adding a "subterraneus" label. Fabricius did describe several Coleoptera from the Madeira Islands: *Carabus maderae* F., 1775, *Carabus vividus* F., 1801, and *Dytiscus lanio* F., 1775 (Zimsem, 1964).

I have discussed the whereabouts of the Lewin collection with several systematic entomologists at the British Museum (Natural History) (see Acknowledgments) and have consulted Horn and Kahle (1935–1937) and Chalmers-Hunt (1976) without uncovering a shred of information. I have examined a specimen identified as *Scarites subterraneus* in the Banks Collection at the British Museum (Natural History); however, there is no evidence that Fabricius ever saw this specimen.

Considering (1) the Copenhagen specimen can only questionably be regarded as the type of *Scarites subterraneus* Fabricius and (2) the improbability of locating a

specimen attributable both to the Lewin collection and to Fabricius, I elect here to designate a neotype for *Scarites subterraneus*, judging the type to be lost. This decision meets all the provisions for designating neotypes under Article 75 of the International Code of Zoological Nomenclature (Int. Comm. Zool. Nomen., 1964). The Copenhagen specimen has not been previously designated holotype or lectotype in spite of three world revisions of *Scarites*: Chaudoir, 1855; Chaudoir, 1880; and Bänninger, 1938.

The species concept of *Scarites subterraneus* F. adopted here equals *Scarites subterraneus* s. str. of Bänninger (1938). The species concept of *Scarites subterraneus* in Lindroth (1961) includes two species based upon examination of specimens determined by Lindroth at the Canadian National Collection (Ottawa). One of these is *Scarites subterraneus* s. str. of Bänninger; the other is a form whose correct name remains yet to be determined. The latter possesses antennae with antennomeres 8–10 distinctly longer than broad, not as broad as long like *Scarites subterraneus*. The present concept of *Scarites subterraneus* F. appears to trace back as far as Melsheimer (1806).

Lindroth (1961:128) restricted the type locality of *Scarites subterraneus* F. to the north shore of Lake Erie, Ontario. I have selected a male specimen, identified by Lindroth as *Scarites subterraneus* F., as neotype. This specimen is deposited in the Canadian National Collection (Ottawa) and bears the following labels: "Pt. Pelee, Ont 10.VI.1929 L.J. Milne"; "Scarites subterraneus F. Det. Lindroth 1958"; "NEO-TYPE *Scarites subterraneus* F. des. S.W.Nichols 1984." The specimen is macropterous. The genitalia have been dissected and placed beneath the specimen in a glycerine-filled microvial. Deposited with the neotype are two female specimens with the same locality label. Both females are also macropterous.

Scarites subterraneus F. may be distinguished from all other North American *Scarites* based upon the following diagnosis:

Antennomeres 8–10 as broad as long (moniliform); metasternum behind mesocoxa longer than metacoxa; macropterous; setiferous puncture in basal half of interval 3 of elytron usually present; elytral striae varying from virtually absent (some western *S. subterraneus*) to consisting of well-impressed grooves, but always lacking minute punctulae; hindbody generally between 7.5 to 10.0 mm in length (not including peduncle).

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